WSRC-TR-99-00067

WSRC Strategic Plan for Information Technology FY2000-FY2002 (U)

April 1, 1999

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ADC / Reviewing Official: _____

Date: _____

Westinghouse Savannah River Company
Savannah River Site
Aiken, SC 29808

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1.0 Executive Summary

This Strategic Plan for Information Technology updates WSRC's plans for utilizing information technology to support the missions of the Savannah River Site in fiscal years 2000 through 2002.

The plan has been developed by the Information Technology Department (ITD) in partnership with both DOE-SR and WSRC line organizations as part of the SRS comprehensive planning process.

The plan outlines at a high level the key issues currently facing SRS in the information technology management area. Further, it proposes strategies for mission alignment in all IT operating areas as well as success measures to assess our progress in meeting the challenges ahead.

Five areas of strategic focus, originally identified during our 1998 planning have been revalidated by DOE and WSRC Management, and they continue to serve as strategic goals for the planning effort. Strategies have been updated, where appropriate, to reflect accomplishments to date and to provide close alignment with current business expectations.

1. Alignment of IT resources to more directly enable accomplishment of site missions
2. Partnering of IT with site customers to optimize and integrate business processes
3. Alignment of IT infrastructure products and services to better meet an increasingly diverse set of business needs and expectations
4. Implementation and promotion of enabling information technologies that will support greater workforce collaboration and productivity
5. Improvement in the quality, integrity, security, and cost effectiveness of the site's IT resource investment

Strategies and performance measures identified here directly support current Strategic Execution Guidance and will serve as the basis for the FY00 Annual Operating Plan.

To that end, the plan is supported by a three year Information Technology Baseline Plan that identifies technical strategies as well as proposed cost and schedules for each of WSRC's four primary IT business lines through FY2002.

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2.0 Plan Responsibility and Linkage

2.1 Responsibility

Strategies identified in this plan are the responsibility of the WSRC Director, Information Technology Department reporting to the WSRC Vice President, Administration and Infrastructure Division.

2.2 Plan Linkage

Information technology strategies identified here are driven directly by the SRS Strategic Plan and the DOE Information Management Plan. They have also been aligned to support the continuing implementation of the principles identified in the 1998 WSRC Computing Architecture Plan as delivered March 30, 1998.

Strategies identified here form the basis for the WSRC Information Technology Baseline Plan FY00-02 (WSRC-TR-99-0068) which outlines technical strategies and costed three-year baselines for each of WSRC's four primary business lines:

Applications Delivery and Support
Direct Division IT Support
Information Delivery Services
Computing and Communications Infrastructure

Together, these plans will drive IT tactical planning through the Annual Operating Plan (AOP) process beginning in FY2000, per current Strategic Execution Guidance

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3.0 External Drivers, Assumptions, and Planning Alignment

3.1 Business Drivers

While SRS continues to enjoy strong support at both community and DOE levels for retention of current missions and as a short list contender for new, long-term missions, pressures on the site to improve performance are both substantial and accelerating.

Budget projections for the plan years show significant cuts in the FY2000 execution year and additional, though less dramatic, decreases through FY2002.

For IT, such reductions suggest delays in replacing obsolete infrastructure, continued loss of core IT skill through attrition, missed opportunities to leverage existing technology, and, inevitably, a erosion of the site's basic competitive strength in the IT field.

On the other hand, the drive to reduce costs is placing much greater demand on the timeliness and accuracy of information as well as the performance of the infrastructure as business processes are fine tuned through automation.

The recently announced siting of new mission at SRS is an important step in securing the future of the site, but is not expected to have a material effect on either funding or immediate operating requirements over the planning term.

Reengineering efforts are continuing within several of WSRC's business functions. And the new, PASSPORT-centered maintenance process is proceeding on schedule. However, major systems-based investment in the larger reengineering targets of Budget Planning or Human Resource management do not appear likely under current funding scenarios. Likewise, investments in major system replacement in areas where reengineering has occurred, such as Procurement and Materials Management do not look promising at this time.

Growing DOE direction toward a complex-wide approach for management of activities, information, and processes is another key planning consideration. WSRC's role in implementing the LANMAS system to provide nuclear materials accountability is but one example of what we see is as growing trend on the part of DOE to develop corporately-sized planning and management of its business lines and an opportunity for SRS to share its competitive strengths.

3.2 Information Technology Drivers

Within the Information Management community, change is also significant, and pressures here will also mount through the planning period.

Issues related to timely resolution of Year 2000 computer problems continue to draw significant near term focus, and emergent issues directly or indirectly related to Year 2000 are likely to extend well into the planning period.

Of foremost concern is the steadily accelerating demand for IT personnel and WSRC's ability to retain adequately trained staff in a very competitive market. Year 2000 is a primary driver in this area, but analysts predict that shortages will persist well into the next decade.

Compounding an already difficult quantitative problem of IT skills retention are the qualitative issues of skill mix and the transition of large segments of the WSRC IT community to new business and technical roles.

Some segments of the business; i.e., desktop support, etc. have standardized to the extent that viable alternative sourcing options are attractive. In these areas, site-specific business knowledge is not a significant requirement.

Other segments, including the site's MVS data center, continue to present an uncertain future until applications replacement strategies and timetables can be defined.

Within the IT infrastructure, shortening product life cycles and funding uncertainties present serious challenges to WSRC's ability to manage both obsolescence and capacity.
Additionally, the old philosophy of utility-based supply in many IT areas (i.e., mainframe data center) is being replaced by one of provisioning specific, heavily customized infrastructures for individualized COTS software solutions.

Increasingly, the site must look to leasing, services procurement, and alternative financing solutions along the highly successful PC Lease model to maintain a core computing and communications infrastructure at service levels that will be acceptable to the site.

3.3 Assumptions

In light of the above factors, this plan makes the following assumptions (in addition to those made by the SRS Strategic Plan 12/97):

- Uncertainties in site staffing levels and funding pressures will continue through the plan years. WSRC strategies must support the rapid and flexible re-scaling of operations as SRS circumstances change.

- The corporately sized portion of the IT infrastructure will continue to shrink under accelerating budget pressure during the plan years. Greater division autonomy in IT spending will increase the probability of homegrown solutions competing with standard site offerings from the central IT organization. Site-wide inter-operability risks will increase over the long term.

- External demand for IT personnel will continue to present significant employee retention issues and, in some instances, operational risk to core IT services.

- Subcontracting and outsourcing strategies will offer skills relief only in limited commercially available segments where SRS business knowledge is not a primary job requirement. Skill-mix will be a primary issue as legacy technologies are retired or outsourced and IT personnel are redirected toward more strategic technologies.

- Reengineering activity, while continuing at modest levels will not drive sufficient change to replace the site's mainframe-based legacy systems (IBRS, TESSERACT, etc) due to severe budget limitations.

- Emergent work (post AOP) will continue to drive need for innovative approaches to delivering on-point IT expertise quickly and outside rigidly enforced IT budget caps.

3.4 Alignment with SRS Strategic Plan

As a refinement and restatement of strategies originally established 1998, this plan continues to define a robust and readily scaleable Information Technology infrastructure to support the following missions as delineated in the SRS Strategic Plan.

National Security: SRS will continue to be a vital factor in the safe and reliable production, delivery and management of tritium inventories and provide backup plutonium infrastructure capability in support of the nation's security. We will ensure protection of all nuclear materials and assets.

IT Perspective:

The Tritium mission is already a strategic focus of WSRC's division support strategy and is playing a primary role in the recently formed IT Steering Council.

As decisions regarding DOE's multi-track strategy for long term Tritium production is finalized, it is essential that WSRC maintain the flexibility and scalability of the site IT infrastructure. This will allow the site to respond quickly and effectively to rapid changes in SRS mission scope.

In addition to SRS-specific strategies, it is important to recognize the role that IT will continue to play in directly supporting DP missions complex-wide. Successful completion and roll out of the LANMAS Materials Accountability System across the DOE Complex reflects the leadership role that is being given to SRS in the IT area.

Nonproliferation: Through alliances and partnerships with others in the DOE Complex, SRS will be a cornerstone of the national effort to effectively manage and disposition excess fissile materials. Effective application of our expertise and capabilities will enhance the nation's success in achieving international nonproliferation goals.

IT Perspective: Recent DOE decisions to locate new missions at SRS further confirm DOE's commitment for a sustained long term SRS role within the DOE complex and suggest the equally important need to maintain the viable and competitive SRS infrastructure, including IT capabilities necessary to support such activities. WSRC is already well prepared to support computing and communications aspects of the planning and startup requirements of this mission as it materializes and, similarly, will maintain the flexibility and scalability necessary to respond cost effectively to further changes as they occur.

Environmental Quality: SRS will continue to implement its risk-based approach to the management of legacy materials, excess facilities, and waste stabilization. Remediation of waste sites and waste treatment will continue. SRS will be a valued contributor to an integrated approach for environmental management across the DOE Complex and will continue to protect and manage the natural resources of the site.

IT Perspective: IT already participates as a very significant partner in the site's environmental management mission, and recent experience would suggest that this role would continue to expand. The Environmental Restoration Division is a second strategic focal point for WSRC's mission alignment strategy, and IT is playing a key role in the division's reengineering activities

Special focus on improved processes for development and maintenance of the multi-year baseline that support the site's Accelerated Cleanup Planning will be provided in this planning period. In addition, IT-enabled business reengineering savings are a major contributor toward WSRC commitments in the area of long term mortgage reduction.

Science and Technology: Underlying our other business lines is a strong and closely coupled science and technology base. Technologies will be developed and integrated into existing and planned processes and facilities to maximize value. National and international collaborations will be established, as appropriate, to deliver cost-effective results that respond to DOE needs.

> **IT Perspective:** No other mission presents a technical challenge to IT that is comparable to that of Science and Technology.
>
> Here, SRS competes on a very aggressive plane with the systems and infrastructure of the nation's premiere laboratories and the adequacy of SRS communications and information processing capabilities as a business enabler continues to be seen by this customer as a critical success factor.
>
> Strategies for external collaboration with the complex and the "Work for Others" approach being taken by SRTC clearly highlight the need for dramatic improvement in the ability of site personnel to communicate with partners and customers.

SRS Corporate Management: SRS will continue to ensure and improve technical and safety excellence, cost effectiveness, community support, and a viable, mission-supportive infrastructure. We will maintain our excellence in environmental management and compliance and business management by striving for continued improvements to ensure customer satisfaction.

> **IT Perspective:** Planning and support of the WSRC support organizations has traditionally represented the heart of the IT mission at SRS and this focus is reinforced in the current strategic environment.
>
> Increasingly, it is recognized that reengineering and automation are inevitably key elements in maintaining our competitiveness in this aspect of site operations. In both cases information technology is already playing an active partnering role.
>
> Likewise, DOE's continued focus on cost effectiveness and the implementation of best business practices at the corporate level is seen as an excellent opportunity to leverage the resources and experience of SRS to larger opportunities across the complex including DOE-wide information management systems (LANMAS), regional/national networking, and Intranet development services.

3.5 DOE's IT Strategies and Expectations

DOE's Information Management strategy remains focused on improving the mission responsiveness of its IT resources and improving collaboration across the complex in all areas of information technology.

Immediate emphasis continues to be placed on the on-time completion of remaining Year 2000 remediation tasks.

At the strategic level, local implementation of requirements of the Clinger-Cohen act are an important deliverable that will supported by WSRC upon finalization of local DOE direction.

3.6 The WSRC Computing Architecture

This plan continues to act as an implementing document for the 1998 WSRC Computing Architecture, which provides an updated vision and implementation framework for IT in the years ahead.

It is expressed in a set of high level principles and strategies for implementing and managing IT across the site

The Architecture provides site focus in six basic areas:

- IT Infrastructure
- Applications
- Data Management
- Business Enablers
- Security
- Business Alignment and Integration

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4.0 IT Business Strategies: Areas for Strategic Focus

During the 1998 planning process, five goals were established jointly by DOE and WSRC Management that continue to serve as guideposts for all aspects of our information technology planning.

These goals are:

- Alignment of IT resources to more directly enable accomplishment of site missions
- Partnerships with site customers to optimize and integrate business processes
- Alignment of the capabilities, price, and performance of IT infrastructure products to meet business needs
- Enabling technologies that will support greater workforce collaboration and productivity
- Continued improvement in the quality, integrity, security, and cost effectiveness of the site's IT systems management

During the past year, WSRC has completed the organizational alignment and redirection of staff to more directly address these strategic goals. They form the basis of WSRC performance measurement in the FY1999 AOP and will do so again in FY2000.

Progress to date has been significant:

For the current planning period, WSRC and DOE have evaluated progress to date in these areas, and adjusted the focus for FY2000-FY2002 in light of mission changes, technical and market conditions, and current SRS funding expectations.

A detailed discussion of each goal follows, supported by specific strategies and success measures.

4.1 Alignment of IT Resources to More Directly Enable Accomplishment of Site Missions

WSRC's foremost goal for IT continues to be the optimal alignment of staff and resources to directly and verifiably support operating division requests for assistance in focusing technology on the accomplishment of SRS missions.
Balanced Scorecards, developed with three pilot divisions provided important focus on areas of opportunity during 1998 and served as high priority work for ITD.

During 1998, a new organization, ITD Division Computing, was established to give this goal appropriate management visibility, and progress has been significant in each of the three Divisions targeted for early deployment. Furthermore, deployment of Division Computing resources has taken place, to some degree, in nine (9) additional Divisions.

As an offshoot to Balanced Scorecard, in 1999 WSRC has put improved mechanisms in place to allow for the customer to: 1) define work needed (beyond ITD charge back core work), 2) request and fund that specific work, 3) reprioritize work based on changing budget environment, 4) provide for teaming relationships between Division Computing and other core ITD for specific projects, 5) put a plan in place to store code in a repository (Visual Source Save) so that it may be re-utilized in support of multiple divisions.

Resources assigned to direct Division-requested scope have increased 10% during the past year, and are targeted to grow an additional 8% in current outyear budget planning.

Like many IT business areas, access to adequate and appropriately trained IT staff continues to be the single largest constraining factor in this emergent area. Subcontracted resources have provided relief in some basic areas, but outsider's lack of knowledge of the customer's specific business processes has prevented substantial use of this strategy for opportunities which are seen by the customer base as presenting greatest opportunity.

With a core organization in place and participating actively in thirteen divisions, WSRC will move cautiously to stabilize these relationships. There will be an increased partnership with each division's own business and technology staff that will focus on the use of selective strategic technologies, (i.e., Lotus Notes, ShRINE), to directly address Division–centered issues and opportunities.

To ensure adequate management commitment to this key objective and to the rightsizing of our IT support operations as a whole, WSRC has established an IT Steering Council, made up, in large part, of senior staff from the operating divisions. This group will validate major IT initiatives.

Objective

Achieve measurable and program-validated success in the use of information technology to positively influence cost, scope, and/or schedule in WSRC's mission deliverables.

Success Measures

- Savings/process improvements realized and validated by WSRC's line organizations
- Line-of-sight positive impact of IT on WSRC performance-based-incentives
- Real and percentage growth in the IT headcount and budget invested in direct mission support activities
- Continuing co-location of IT personnel with customers in actual field environments where mission enhancement opportunities can be better understood and addressed
- Shared understanding between the line organizations, DOE-SR, and IT resources of improvement opportunities as evidenced by formal service agreements and work packages

Strategies

As discussed below, WSRC strategies to improve mission alignment will continue to:

- Mobilize and redirect appropriately skilled IT resources toward mission needs
- Improve IT's understanding of mission opportunities
- Define needs, validate with customer, meet requirements on-time and within budget
- Leverage successful solutions across SRS program organizations

4.1.1 Mobilize and Redirect Appropriately Skilled IT Resources Toward Mission Needs

The site's ability to attract and retain IT personnel has been a key issue for some time in virtually all IT operations. However, the problem is particularly acute in the Division support area where business opportunities, readily identified and funded, cannot be addressed due to corporately constrained headcount, lack of experienced staff, and/or inappropriate skill mix for the job at hand.

WSRC's implementation of a formal IT Employee Retention Program during late 1998 has been a key stabilizing factor in reducing attrition. But overall headcount caps remain problematic, especially in the area of emergent work, appearing after formal Annual Operating Plan (AOP) budgets are cast.

Given limited expectations for significant growth of IT headcount in the near term WSRC strategy will focus on:

- Continued growth and expansion of the ITD Division Computing Organization within and across WSRC's operating divisions as supported by direct funding during the standard AOP development process.

- Continued redirection of IT resources and costs away from WSRC service pool tasks toward direct line organization needs where skill mix issues can be successfully overcome.
- Greater use of task-focused subcontracting where appropriate in the IT Infrastructure businesses to leverage limited headcount toward focus on mission-enhancing priorities.

- Retraining of displaced staff where infrastructure subcontracting efforts introduce significant skill-mix transition issues.

- Aggressive retraining of overall staff in site-specific business activities and strategic technology areas

- Greater use of flexible, rapid deployment contracts to quickly deploy staff for emergent Division needs, where business process knowledge is not a significant factor.

- Improved internal processes to identify and prioritize field opportunities and to deploy technical resources efficiently and with significantly lower cycle time.

- Continuing efforts to attract and retain overall levels of core IT competencies as implemented through the ITD Employee Retention Program.

4.1.2 Improve IT's Understanding of Mission Opportunities

During 1998, WSRC recognized that in order to fully leverage mission opportunities, IT resources must have a thorough understanding of actual operating processes and requirements in the operating divisions.

Direct deployment of the Division Computing organization in the field with the customer has confirmed both that opportunities exist and that IT can quickly become a partner given appropriate access to customer issues.

Still, because WSRC has historically focused most of its IT resources on the more traditional needs of the support organizations, few IT personnel have gained such direct exposure to line operations, resulting in less than optimal deployment.

In order to build the needed partnership, both IT and the WSRC line organizations must work together at multiple management levels to develop a clear understanding of where and how IT can best contribute to mission performance, particularly in the area of business improvement and reengineering.

ITD Division Computing will negotiate, during the AOP baseline process, the requested IT scope, priority, and funding profile for each supported customer division. Based on these individual negotiations, Division Computing will work with the core ITD functions to determine where core services may more efficiently and effectively provide solutions as a sublet to Division Computing.

With the broad scope of IT support and interfaces that Division Computing provides to the site, improved mechanisms will be put in place to evaluate requests for redundancy with current initiatives or other proposed initiatives.

Through ongoing, co-located interaction with individual customers, Division Computing will be in a position to understand the business climate of our customers and to reprioritize or re-deploy work based on the customer budget allocations.

Continuing WSRC focus in this area will provide:

- ITD management infrastructure (Level 4) to provide line management with a clear and consistent point of contact for IT issues and to interact more directly with Division planning activities.
- Increased partnering and interaction with Divisions' own IT-competent staffs to leverage their facility-specific business knowledge.
- Formalized analysis and linkage of IT engagements in the field with mission goals and strategies as developed in the SRS Strategic Plan and supporting elements of the SRS Comprehensive Plan.

4.1.3 Define and Validate Needs, Meet Requirements on-Time, and Within Budget

During 1998, IT has made significant progress in regaining credibility as a partner that is agile and responsive to the urgent and critical customer needs.

Perception, however, remains a key issue that must be overcome if IT is to regain a seat at the table for many line organizations

Continuing a commitment to deliver IT solutions to the field on time and within Budget, WSRC strategy will:

- Continue to position site-specific IT expertise in the field.
- Expand and reward partnering between forward-deployed field staff and IT infrastructure personnel to deliver faster and better scaled, team-based solutions.
- Document and communicate successes, and capture results in measures that are recognized as important by the customer.

4.1.4 Leverage Successful Partnerships Across SRS Field Organizations

Given scarce resources and declining budgets, it would seem obvious that WSRC would leverage success in any mission-enhancing solution development to address similar opportunities in other areas. Often, however, individual line organizations have evolved very different processes and systems to achieve what are in reality similar business objectives. Inter-program communications are often lacking; moreover, such solutions are often embedded in specific facility operations that are, in fact, very different.

To maximize opportunities for a consolidated approach, solutions that can successfully be shared must be identified early and engineered with the flexibility needed to function in multiple environments.

WSRC continues to believe that such solutions can strike a balance between the specifics necessary to support individual mission needs and the flexibility needed to enable common solutions.

IT plays a key role here, both as a division resource in fulfilling an immediate need, and as a site integrator for sharing solutions on a broader basis.

To leverage shared solutions opportunities, WSRC will:

- Maintain active communication between division IT teams to collaborate in leveraging best practices and potentially shared solutions
- Develop and maintain mechanisms for collaborative investment in shared opportunities and standard site technologies through the IT Steering Council

4.2 Partnership With Site Customers To Optimize And Integrate Business Processes

WSRC's second strategic goal remains focused on maintaining an active partnering role in optimizing the site's business processes through the appropriate use of technology, while recognizing that the up front costs of such investment will continue to pose significant challenges during the planning period.

During 1998, this area received significant site attention as the site struggled with balancing the acknowledged need for process improvements (and implied software investment) with the acute funding requirements of the operating divisions.

Acquisition of the PASSPORT system to support the site's reengineered maintenance requirements was, on the one hand, a critical step forward in the site's adoption of IT-embedded best business practice, and results continue to be positive as the system is rolled out. Introduction of PASSPORT, however has introduced new issues and opportunities with regard to inter-relationships between WSRC's maintenance functions and other business operations including those of procurement and materials management.

The Site will still pursue the replacement of obsolete systems with commercial software when funding permits such investments. In lieu of such funding, the site will continue to make incremental changes, both to support business changes and to migrate from aging systems.

WSRC's recently formed IT Steering Council will champion the strategic drivers for reengineering and, more particularly, business systems replacements. Additionally, they will provide critical validation and options to executive management of the fiscal aspects of site investment in this area.

Regarding specific systems-related issues, where such issues cannot be resolved at the departmental level, or where unique opportunities require a company-level perspective, the WSRC Vice President, Administration and Infrastructure Division will continue to act as arbiter, and will, as necessary, involve other members of senior management to ensure that any actions taken are in the overall best interest of the site.

In both cases IT can and will play a key supporting role, presenting technical options as requested and maintaining appropriate expertise and supporting infrastructure.

Objective

Achieve measurable improvement in customer-valued cost and/or productivity success measures through IT support and implementation in both operating and support divisions.

Success Measures

- Cost effectiveness as expressed in cumulative savings through IT support of reengineering efforts
- Cycle time reduction, quality improvement, and/or other measurable impact on Critical Success Factors as defined by the site programs and support organizations

- Redirected manpower, expressed as field manpower (FTE's) freed by IT-reengineered processes to perform other mission enhancing activity

Strategies

As discussed below, strategy to partner with site customers will:

- Identify and partner early with all functional reengineering efforts
- Utilize partnerships to achieve near term reengineering-based results
- Identify opportunities for improved integration between existing systems

4.2.1 Identify and Partner Early in All Functional Reengineering Efforts

During 1998, IT participated actively in all of WSRC's primary reengineering team efforts including those of Finance (FICOPS), Procurement, and Maintenance. In addition, ITD chaired WSRC's Integration Committee, formed to improve communications between business functions and to develop technical strategies for interfacing between PASSPORT and related business applications. These efforts are ongoing, and IT will continue its facilitation and support role into the planning term.

To strengthen its strategic role and to insure early participation in future efforts, IT will leverage its relationship with the IT steering council role into the business applications area, and will work to support site business reengineering efforts.

4.2.2 Utilize Partnerships to Achieve Near Term Process Improvement Results

With a constrained ability to invest in site-wide process integration given the current budget environment, WSRC's IT strategy in the process improvement area will continue to focus on a series of more limited efforts:

- improved internal business functions in both operating and support organizations through enhancements to existing systems

- improved integration by enhancing touch points between existing site systems and new systems as they are implemented

Success in both areas will require a close working relationship with field organizations.

4.2.3 Identify Opportunities for Improved Integration Between Existing IT Systems

With expected completion of Year 2000 remediation activities expected by March of FY99, attention will be turned toward the long-term disposition of the site's aging legacy systems.

Funding for wholesale replacement of this portfolio is unlikely. However, there is a growing recognition that an overall strategy for phased systems replacement over the next several years is both necessary and appropriate.

With migration to Passport, a major site system has been replaced by commercial software. The other major systems support Procurement (PCS), Materials (PCS/FMTS), Finance (IBARS, CLS, TACS, IBS) and HR (Tesseract). Replacement of a single commercial system is expected to cost several million dollars and future funding for even one system replacement has not been identified. WSRC's focus will be on replacing the most outdated systems first, starting with PCS. Other site systems are not nearly as old and are based on technology that remains strategic to the site. Entirely rewriting a system as large as PCS is no longer feasible and several commercial packages exist that can perform large portions of the functionality currently performed by PCS.

In addition, the FMTS system has had significant functionality added that can replace portions of PCS. While continuing to rely on site developed systems is not the site's strategic direction, continued reliance on some site systems, and increasing their functionality in the short term, will be essential in order to support business functions with limited funds.

4.3 Alignment of IT Infrastructure Products to Meet Diverse Business Needs

WSRC's third goal addresses an ongoing need to maintain and leverage the capabilities of the existing IT infrastructure while more closely aligning investment in this area to the overall mission support strategies.

Within this context, infrastructure is composed of those services that, in the interest of lowest cost and/or inter-operability, are provisioned on a site-wide basis. Examples include SRS communications systems, site networks, data center processing services, electronic mail, Intranet services (SHRINE).

In the past, the IT organization has offered these services on an as-needed basis, charging based in actual consumption by all site organizations. This approach allowed the Divisions to tailor IT services and (costs) to their own individual needs and differing levels of affordability.

Beginning in FY2000, however, this approach has been replaced by one that will corporately size IT Infrastructure with other support businesses in an Essential Services pool that will be allocated to the divisions as overhead.

Such a strategy significantly streamlines the accounting aspects of IT service administration, but moves the responsibility for rightsizing of the computing infrastructure further away from the direct customer and toward a company-level body.

For IT, the challenge presented involves balancing and defending the legitimate needs of technology-centered organizations and missions against an overall site philosophy of overhead cost downsizing.

To address these issues, WSRC will continue, wherever possible, to refocus IT infrastructure costs away from central service pools. The focus will be to minimize central service pools to essential site services where the customers represent all divisions. (i.e. Time and Attendance system infrastructure). Customers will be asked to directly fund specialized services which are unique to specific populations through formal Work Authorization comments (WADs), via external strategic sourcing arrangements for services or leases (particularly in areas where the solution is not within ITD's core competencies OR where this is the most favorable solution from a cost perspective). This will reduce the Central Service pool, providing a lower overall site cost burden. However, specific divisions will see direct impact on funding where solutions are unique.

Additionally, WSRC will use the IT Steering Council to provide independent validation and prioritization of overall computing infrastructure needs, and to assure that overall goals of standardization, inter-operability, and cost effectiveness are preserved.

Objective

Measurably expand the range of technical capability, business functionality, and pricing offered in WSRC's family of standard computing and communications products in order to support increasing diversity in the site's IT customer base.

Success Measures

- Increasing diversity of IT products and service levels available internally and from external providers

- Successful benchmarking of IT products against peer groups and external alternatives to insure optimum cost effectiveness on a product-by-product basis.

- Sustained reduction in WSRC individual service pool costs (IT Component of the Essential Site Services Pool) through planning and execution years as costs are redirected to direct division purchase where appropriate.

Strategies

As discussed below, WSRC strategies to align the IT infrastructure products will:

- Formalize and communicate baseline capabilities and the business justification for existing IT products to site stakeholders
- Improve awareness and customer involvement in shaping future products
- Establish IT infrastructure to support greater product flexibility
- Identify and implement opportunities to shift IT resources toward more direct mission support

4.3.1 Formalize and Communicate Baseline Capabilities and the Business Justification for Existing IT Products to Site Stakeholders

During 1998, WSRC has increased the training available to the end user community in the use of the site's standard IT product set, in large part through an aggressive program of computer-based (CBT) training offerings. Additionally communications regarding new features, tips, and service schedules have been expanded at multiple levels through written communication and the presentation of ITD Roadshows.

These improvements have dramatically improved awareness in the field. However, such efforts must be continued as both the sophistication of the end user community grows, and the technology grows yet more complex.

Strategies begun in 1998 will continue during the planning period and will include increased levels of training in specific IT products coordinated by IT and offered through the WSRC's Site Training Organization.

4.3.2 Improve Awareness and Customer Involvement in Shaping Future Products

Active customer dialog exists within the management structure of some of WSRC's current IT product sets. However, such communication needs to be broader-based, more frequent, and focused on improvement in the areas that customers (not IT) value most.

Despite inclusion of IT in the larger ESS pool beginning in FY2000, WSRC will continue to maintain a sharp focus on IT at the individual product level in order to insure first, that individual costs remain competitive, but perhaps more importantly, to maintain planning and technical alignment with the needs of each product's dominant user base.

Focus groups and associated customer feedback mechanisms continue to be extremely valuable in this regard, and they are an essential element of WSRC's strategy to improve the planning and alignment of the standard product set.

Additionally, the formation of the IT Steering Council as an oversight body for major IT investment is seen as a key step in obtaining independent validation of strategic IT needs from a site perspective.

4.3.3 Establish IT Infrastructure Components to Support Greater Product Flexibility

As funding gaps between the site's operating and support functions continue to widen, it becomes important that technical services, while centrally funded and managed, are deployed at levels appropriate to the needs of specific business areas.

For IT, the implications remain two-fold.

First, a range of service levels are necessary to assure that products and their associated costs are tailored to individual needs and are not deployed in a "one size fits all manner".

Second, absent a "pay for service provided" approach, policies and standards must be established to define justified need for services to support the best allocation of resources.

In several instances, greater product and pricing flexibility has been customizable through moderate changes in technical or administrative infrastructure. However, absent significant funding for a retooling of basic services, WSRC will, over the planning period, focus instead on narrowing product offerings to a "core set" of basic services. Through the increased use of third parties, WSRC will introduce direct customer-funded options to provide IT commodity services in a range of costs and service levels that is more responsive to the diverse needs and levels of affordability across the customer base as we have already done within the multi-tiered PC Lease Program.

In all cases, WSRC will continue to evolve product lines around clear standards to insure support efficiencies and maximum economies of scale in site procurements.

4.3.4 Identify and Implement Opportunities to Shift IT Resources Toward More Direct Mission Support

The above strategies are important step in adding flexibility and end user control to the infrastructure product set.

However, it is also recognized that the site expects a continuing decline in these corporately sized services through the planning term.

In the interest of supporting greater programmatic control of costs and lower pools in the future, new IT investment, where it supports a specialized customer group or constituency, will be targeted toward direct cost recovery mechanisms and, where possible, direct customer purchasing of services.

4.4 Implement Enabling Technologies to Support Greater Collaboration and Productivity

WSRC's fourth strategic goal continues to address the need to improve the productivity and information self-sufficiency of the entire SRS workforce through the responsible introduction of powerful new enabling technologies.

1998 has been an extremely productive year in laying the foundation for significant gains in this critical area, and strategies for the planning period will build on current efforts.

At the individual desktop level, investment in added functionality will pause as the site digests the added capabilities provided by newer releases of Microsoft Office, Data Warehouse and ShRINE.

Collaboration tools, particularly at the workgroup level become an area of strategic focus in current planning, and are seen as the next key step in enabling an increasingly IT-literate workforce. The implementation of Lotus Notes during 1999 will establish a new strategic base around which multiple process-enabling and communications-enhancing strategies can be developed.

More importantly, the flexibility of the product set allows much greater Division autonomy in their automation efforts, as already seen in a broad, collaborative set of IT resources focused on the needs of the Environmental Restoration Division.

Objective

Implement the tools, training, and technology necessary to offer the site's end user population greater self-sufficiency in building and managing a more information-enabled work environment.

Success Measures

- Cycle-time reduced in the execution of site business processes
- Utilization of Notes-based workflow technologies to improve business processes
- Improved levels of end user proficiency in the use of technologies already deployed

Strategies

As discussed below, strategies for implementing enabling technologies will:

- Maintain a standard desktop to leverage personal productivity
- Leverage the site's investment in Lotus Notes to support new collaborative productivity enhancements at the workgroup level
- Educate the workforce on existing and emerging capabilities
- Establish a common application infrastructure to improve business process automation

4.4.1 Maintain a Standard Desktop Tool Set to Leverage Personal Productivity

For some time, WSRC's strategy at the desktop has continued to build upon the basic capabilities of the site-standard Microsoft Office product family.

Again in 1998, the site had a particularly successful year in standardizing and updating SRS desktops through a well-structured PC lease program.

This transition has greatly leveraged the site's ability to migrate quickly to the inherent capabilities of Microsoft Office 97.

The growing complexity of the technology and a lack of training in it capabilities continue to be issues in the user community. And, to that end, WSRC will slow its upgrade strategy during FY2000 and focus instead on training and support of users in existing capabilities.

4.4.2 Leverage the Site's Investment in Lotus Notes to Support New Collaborative Productivity Enhancements at the Workgroup Level

ITD's strategic focus on improving productivity at the workgroup level received an important boost during 1998 with procurement of the Lotus Notes product.

Acquisition of Notes has offered two immediate advantages: first, a logical evolutionary path for the existing electronic mail service which is already underway, and second, the integration of a wide range of data management and workflow enabling capabilities that extend the core mail product into a wide range of additional capabilities.
In this regard, WSRC believes that the ability to quickly and to efficiently mobilize high performance teams for planning and problem resolution, and to improve the effectiveness and communication of standing team efforts can significantly leverage productivity at the desktop to the workgroup level.

Desktop collaboration tools, built on a Notes base, can significantly improve productivity of standing team efforts and of ad hoc high performance planning and problem resolution teams.

4.4.3 Educate the Workforce on Existing and Emerging IT Capabilities

Despite a strong and growing need for end user IT education, WSRC's training organization faces increasing pressure to reduce services.

If the site is to truly leverage the capabilities of current and future technologies, training must not only increase, but must focus on the application of the technology in improving everyday business processes.

IT education beyond basics is essential, and will continue to be encouraged. Rapid advances in the breadth and quality of Computer Based Training (CBT) make this a very attractive media for delivery of IT training, and it will form a central part of more cost-effective end user training activities.

4.4.4 Establish the IT Infrastructure Needed to Leverage Business Processes

A set of recommended tools for end-user development and workgroup computing environment is already being shaped today as a direct result of the selection and forthcoming implementation of Lotus Notes.

User and workgroup applications development will be encouraged, but will be based on a limited set of established tools. Because of this strong groupware initiative, business integration will be facilitated. The site-wide mail and desktop product infrastructure will undergo continuing improvements to support new capabilities in automation, especially routing and workflow. Today's routing system will become the foundation for later process automation applications.

Additional capabilities such as calendaring, bulletin boards, interactive white boards, document conferencing, and electronic commerce will also improve business automation. For most effective integration, business partners, regulatory agencies, other DOE sites, and suppliers will all be considered when designing and deploying new systems.

4.5 Improvement in the Quality, Integrity, Security, and Cost Effectiveness of the Site's IT Investment

WSRC's fifth goal focuses on the need for solid operating controls and the need to maintain a sustained focus on protection of the site's investment in systems and data as cornerstones of a long-term information management strategy.

Within the context of the current strategic planning effort, specific attention is focused on the areas of Computer Security, Data Management, Software Engineering and Change Management.

In the Computer Security area, non-traditional business initiatives such as SRTC's "Work for Others" program, collaboration with other sites on LANMAS and the APT program are creating unprecedented challenges in the area of computer security. New balances must be struck between the need for a strong, Agency-driven emphasis on greater openness and collaboration with external partners and the site's well-established systems and processes to protect its systems and data from loss or compromise. These changes are cultural as well as technical, and they will require broad-based collaboration and strategic focus during the planning period.

New partnerships formed between WSRC's Information Technology and Computer Security Organizations will establish a new company-level approach to these issues.

In the Data Management area, WSRC will continue efforts to re-focus planning and administrative activities at the site level identifying opportunities for data sharing and integration as well as improving overall data quality.

WSRC strategy supports working with data owners to define comprehensive business requirements for disaster recovery, backup/restoration and recovery requirements, and data retention requirements to ensure proper alignment to business needs.

In the Software Engineering and Change Management areas, WSRC has recognized and supported an increasing role of COTS software in the SRS environment, and acknowledges the need to more directly address the criteria against which COTS products should be evaluated

Systems engineering and Administration is also a key focus area in this emerging environment.

WSRC experience thus far suggests that COTS software frequently dictates the platform and in some cases the data configuration within which the application will run.

As business systems migrate from what has largely been a robust and secure mainframe environment with mature administrative procedures to new, radically different architectures, the security and integrity of the new implementation may not be adequate without upgrading newer technology areas to match this level of robustness.

Such upgrades are both technical and procedural. For example, the proper setup and migration of the tools and software for monitoring the system performance and security must be in place and robust within the newly defined environments to match the level of criticality of the business systems. The administrative procedures within the dictated COTS system environment must support backup and recovery, disaster recovery and administrative security functions to rival legacy systems.

The implementation of an Enterprise Management basic infrastructure during FY99 will also require expansion into new areas to support COTs implementations to supply monitoring, notification and escalation of security and integrity issues on the systems.

Backup, recovery, data retention requirements by business application and disaster recovery are primary areas of focus during FY99 to supply these robust implementations in the core COTs environments. Emphasis in FY00 will be on validation by application of the comparison of the cost vs. benefit for these structures.

Objective

Measurably improve the quality and cost effectiveness of ITD's business systems and IT infrastructure products through vigorous implementation of management programs for data, systems management, change management, software implementation and security.

Success Measures

- A strong and well communicated data policy
- SRS Data Stewardship program, developed, implemented, and enforced
- Selection, training, and competency in a standard software development tool set
- Consideration of security architecture in IT solutions planning
- Successful Adoption of a site-standard software implementation methodology
- Effective IT change control systems and processes operating across business functions and organizations
- Implementation of secure and reliable methods for flexible and robust off-site access to SRS systems

Strategies

WSRC strategies for improved quality, integrity and security will:

- Sustain support and focus for the SRS Data Administration
- Maintain and Improve the IT Change Management Review Board Program
- Adopt a comprehensive system engineering approach to ITD's software implementation and management
- Partner with Computer Security to safely meet emerging business needs
- Implementation of Configuration Management for the IT Infrastructure
- Continuing implementation of project management

4.5.1 Sustain Support and Focus for the SRS Data Administration

Strong, independent data management remains critical as the site renews efforts to align its business processes and to share data across programs and organizations.

Strategy in this area reaffirms the WSRC Policy regarding Data and Information Management (MP. 3.8) and continues the staffing necessary to provide data repository support, standards management, related data planning, and a sound data configuration management process.

Improved communications to site data owners, supported by formalization at the site level of their stewardship roles and responsibilities, are key steps in improving the overall quality of site data. This is particularly true in those areas where legal and/or regulatory exposure is high and where strong opportunities for data reuse may exist.

Lastly, strategy supports improved data access with continued planning and development of the SRS Data Warehouse environment, including development and integration of data in new subject areas of broad interest including procurement, payables, and environmental data.

4.5.2 Implement Enterprise System Management & Change Management

As suggested in our 1998 plan, emerging Enterprise Management Software tools offer unprecedented opportunities for the consolidated management of the complex, distributed computing environment at SRS.

During 1998 the foundation for such an enterprise framework was deployed in a series of products including Enterprise Console, Cross-Platform Job Scheduling, and IT Asset Management. Follow-on product installations will continue through the planning window.

Formal Change Management was also introduced during 1998 and will continue to support WSRC's efforts to improve quality and integrity of overall IT service through a disciplined operations focus.

4.5.3 Adopt a Standard Software Engineering Approach

WSRC recognizes that a consistent and well-defined approach to the analysis, design, implementation, integration and management of the site's application software environment is critical to meeting our strategic goals.

We have already begun to implement a more engineering-based approach to software development and implementation by adopting a standard development methodology based on the principles of the current E8 manual. Rigorous enforcement of standards throughout the development cycle, structured evaluation of commercial software alternatives, and full consideration of process integration opportunities support this change. Creation of a central work request repository, a standardized approach to capacity planning, and common software development, implementation, and management processes across ITD are also in process and will provide a consistent approach to managing our application development workload across all of ITD.

Check-in/check-out of production software and automated tracking and approval of software modifications are key elements of ITD's software configuration management program, which will also be implemented within the planning period.

Each of these initiatives will be integrated with ongoing Project Management and Change Management activities to achieve our stated objectives.

4.5.4 Partner With Computer Security to Meet Emerging Business Needs

WSRC strategies in the computer security area will offer a proactive response to support new business opportunities, including the site's telecommuting pilot, the business requirements for information exchange within the complex and to the public where appropriate, the introduction of strategic sourcing agreements within the IT infrastructure environment and the increased mobility of the workforce. The focus will be on retaining a high security profile within this changing environment without increasing site costs.

Through new partnerships established between IT and the Computer Security organization, WSRC has consolidated dispersed ITD security planning and administrative activities in a central departmental security management function. Security has become another step in the change management/ configuration management process to adequately address issues early in the implementation phase of a project. This posture better supports COTS implementations where the security risks of a product are best identified before a purchase.

Improvements in the communication, tracking and risk analysis process will also improve the site's security posture and potentially improve turnaround times for system implementations.

Attachment 1 – Plan Alignment with SRS Strategic Plan

IT Business Strategy #	IT Business Strategy	Site Strategy #	Site Strategy
4.1	Alignment of IT resources to more directly enable accomplishment of site missions	CM 1.1.1	Manage in accordance with an environmental management system.
		CM 2.2.2	Optimize mission accomplishment and resource use through a comprehensive planning and risk-based prioritization process.
		CM 2.2.4	Apply project management techniques, including validated baselines, to all program activities.
		CM 2.3.5	Conduct workload/workforce analysis to obtain optimal use of staffing resources and skills.
		EQ 1.1.3	Use facilities for safe, cost-effective storage and nuclear material stabilization and processing.
		NP 2.1.2	Expand SRS's role in defining nuclear material accountability for the DOE Complex and international activities.
		NP 2.2.2	Integrate with the site's safeguards and security planning process to further develop a comprehensive MPC&A Program.
		ST 1.2.1	Develop and maintain a technology needs assessment for current and future missions.
4.2	Partnership with site customers to optimize and integrate business processes	CM 2.1.1	Seek and use customer and stakeholder input in planning processes.
		CM 2.2.2	Optimize mission accomplishment and resource use through a comprehensive planning and risk-based prioritization process.
		CM 2.2.3	Continue to pursue privatization initiatives, expand commercial procurement practices and subcontracting, as appropriate.
		NP 2.1.2	Expand SRS's role in defining nuclear material accountability for the DOE Complex and international activities.

Attachment 1 – Plan Alignment with SRS Strategic Plan (continued)

IT Business Strategy #	IT Business Strategy	Site Strategy #	Site Strategy
		NP 2.2.2	Integrate with the site's safeguards and security planning process to further develop a comprehensive MPC&A Program.
		ST 1.2.1	Develop and maintain a technology needs assessment for current and future missions.
4.3	Alignment of IT infrastructure products to meet diverse business needs	CM 2.1.2	Increase understanding and trust by improving the quality, timeliness, frequency and sufficiency of information.
		CM 2.2.2	Optimize mission accomplishment and resource use through a comprehensive planning and risk-based prioritization process.
		CM 2.2.3	Continue to pursue privatization initiatives, expand commercial procurement practices and subcontracting, as appropriate.
		NP 2.1.2	Expand SRS's role in defining nuclear material accountability for the DOE Complex and international activities.
		NP 2.2.1	Develop partnerships with other laboratories and international initiatives by sharing SRS's extensive technical expertise, facilities and experience.
4.4	Implement enabling technologies to support greater collaboration and productivity	CM 2.1.2	Increase understanding and trust by improving the quality, timeliness, frequency and sufficiency of information.
		NP 2.2.1	Develop partnerships with other laboratories and international initiatives by sharing SRS's extensive technical expertise, facilities and experience.
4.5	Improvement in the quality, integrity, security, and cost effectiveness of the site's IT investment	CM 2.1.2	Increase understanding and trust by improving the quality, timeliness, frequency and sufficiency of information.
		CM 2.2.1	Emphasize results and accountability in contracting and performance.

Attachment 1 – Plan Alignment with SRS Strategic Plan (continued)

IT Business Strategy #	IT Business Strategy	Site Strategy #	Site Strategy
		CM 2.2.2	Optimize mission accomplishment and resource use through a comprehensive planning and risk-based prioritization process.
		CM 2.2.4	Apply project management techniques, including validated baselines, to all program activities.
		CM 2.3.1	Ensure a trained, competent workforce is aligned to support site missions.
		NS 2.1.1	Use the site Safeguards and Security planning process to provide the basis and justification for security programs, budget and staffing requirements.
		ST 1.2.1	Develop and maintain a technology needs assessment for current and future missions.